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VI.

BALL-VALVE FOR CISTERNS.

The SILVER *Isis* MEDAL *was presented to Mr. J.* CROCKFORD, *No.* 1 *Litchfield Street, Soho, for his Ball-Valve for Supply-Pipes to Cisterns; a Model of which has been placed in the Society's Repository.*

1 *Litchfield Street, Soho,*
April 10, 1838.

SIR,

I BEG leave to lay before the Society of Arts an invention for keeping up a full supply of water from ball-valves during the time required to fill the reservoir; it is also applicable to ball-cocks.

I am, Sir, &c. &c.
J. CROCKFORD.

A. AIKIN, *Esq.*
Secretary, &c. &c.

Reference to the Figures.

This valve is intended, in the first place, to open to the fullest extent, with a small descent of the surface of the water in a cistern, and thereby render it suitable for very shallow ones, one foot of depth giving plenty of room for its full action. Secondly, to give the benefit of whatever descent may have occurred during the intervals of supply by opening the valve in a corresponding degree, and keeping it so until the cistern is again quite full.

Fig. 1 represents the valve open nearly to the full extent. In fig. 2, it is shut. *a a,* the surface of the water; *b,* the service-pipe; *c,* the valve, connected by two link-plates to the lever *d d; f,* its float; *e,* a click that will catch in any of the teeth of the rack *g,* and thus lock the lever *d* down, step by step, as the teeth of *g* pass it during the gradual lowering of the water's surface, the tail *h* being heaviest. *i* a cross lever, attached by a joint to the tail of the click; its purpose is to raise the tail *h* only when the cistern is quite full; and thus, by throwing the click out of the rack *g,* to let the float *f* rise, as in fig. 2, and shut the valve. *j* is the float of the cross-lever *i;* it is marked by dotted lines only in fig. 1, for the sake of shewing the click which is behind it. Both the floats

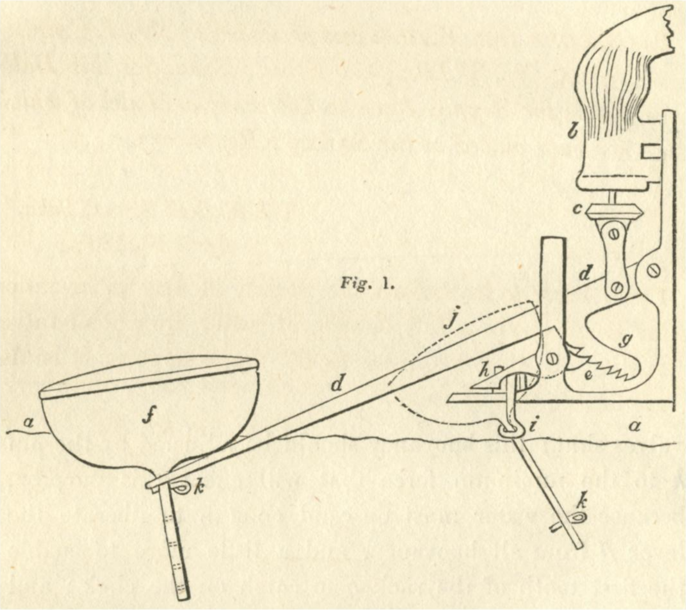

Fig. 1.

have central rods, with several small holes to receive a pin *k*, by which the exact height of the floats may be adjusted.

In fig. 2, the float *f* is quite submerged, so that its whole buoyancy is acting on the long lever *d* to keep the valves shut; this buoyancy should be adjusted by the pin *k* to the minimum force that will effect this purpose, because the water must descend enough to liberate the lever *d* from all buoyancy, and a little more to enable the first tooth of the rack *g* to catch on the click; and the flatter the two floats are made, the more perfectly will they act at the right time, and they will begin to lock with so much the less descent of the water.

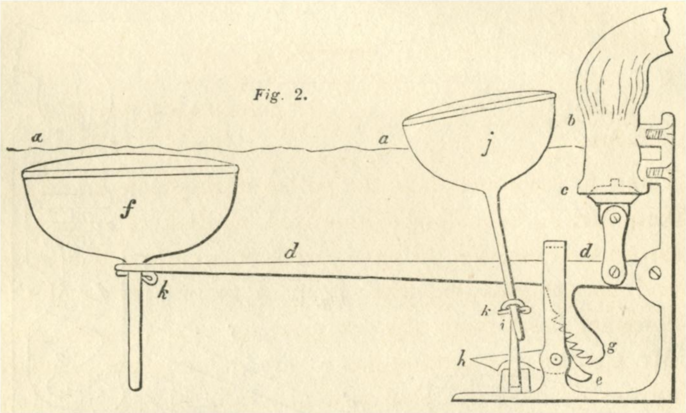
Fig. 2.

Engine Manufactory, New Road,
Sir, *April* 11, 1838.

I have lately been employed to make a very ingenious and novel apparatus for the improvement of ball-valves and ball-cocks. The inventor and sole contriver, is my friend Mr. Crockford, in the house of Messrs. Combe, Delafield, and Co. I have little hesitation in saying, it is the most simple and clever contrivance I ever witnessed in operation.

I am, Sir, &c. &c.

A. Aikin, Esq. FREDERICK BRAITHWAITE.
Secretary, &c. &c.

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92 *Tottenham Court Road,*
April 10, 1838.

SIR,

I BEG to recommend to the notice of the Society of Arts, &c., Mr. J. Crockford's improved method of supplying cisterns, tanks, &c. I have carefully examined the same, and am enabled to state, being a manufacturer of the common description of work used for that purpose, that Mr. Crockford's method has a very superior and decided advantage over the plan now generally in use, and that it is entitled to the consideration of the Society from the circumstance of its effecting an improvement long wanted, and combining great usefulness with certainty of action. I beg leave to add, I have seen it in practical operation, when it most fully and satisfactorily proved its superiority.

I am, Sir, &c. &c.

A. Aikin, Esq. J. WHEELER.
Secretary, &c. &c.